

THE MOTOR AGE

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"ON THE ROAD" IN THE 20th CENTURY

LOOKING BACKWARD IN 1902—THE TRAVELING SALESMAN, TURNED GIPSY, IS CONSTANTLY ON THE ROAD YET EVER ENJOYS HOME LIFE—ESCHEWS HOTEL FARE AND BEDS, BREATHES WHOLESOME FRESH AIR, NEVER HURRIES TO CATCH TRAINS OR IDLES THROUGH WEARISOME WAITS—HE RUNS HIS AUTOMOBILE CAR UP TO CUSTOMER'S DOOR AND THE CURIOSITY OF THE LATTER RESULTS IN LARGE ORDERS—AN UP-TO-DATE SUGGESTION



the same line of thought. It may be that the writer has slightly antedated the state of affairs which he describes, but

if so not by any great length of time. The letter reads:

Boston, Sept. 23, 1902.

Editor The Motor Age:—Believing that your readers might be interested in my experience in adapting the motor vehicle to the needs of the traveling salesman, I take the liberty of telling my experiences. To do so I must preface my story with a little personal history. I have been traveling in Massachusetts, Rhode Island and Connecticut for Messrs. Brown, Smith & Jones for the past ten years, doing an entirely satisfactory business for them. I had long been dissatisfied, however, owing to the fact that I had, all told,

less than two months in the year at home, and, being a married man, this was in no wise pleasant. I had hoped to get an office position, but, having been brought up on the road, as it were, I was not fitted for a position that would enable me to earn what is necessary for the wants of my wife and myself.

I had saved up a snug sum—a little more than \$6,000—and had often considered going into business for myself, but after carefully considering the risk of losing my capital and plunging myself into debt, I abandoned the idea and gave myself up to the none too pleasant prospect of spending the remainder of my years on the road.

Taken for a Visionary

It was just at this time that the motor vehicle era first began to manifest itself with vigor in this country. I had read two or three times in the newspapers of the adaptability of the motor vehicle to the uses of traveling salesmen, and had become sufficiently impressed with the idea that it could be utilized to excellent advantage to mention the subject to my firm, intimating that I should be glad to be the salesman to give the horseless carriage a trial, if they decided to experiment with one. I was treated as a mild sort of monomaniac and was told that they would consider the matter when its practicability had been demonstrated by others who cared to risk their money in reckless experiments. They intimated that this might be some time within the next twenty-five years.

The answer was about what I had expected and I was not seriously disappointed. A little later on, however, I came across another newspaper item in regard to the saving in railroad fare that could be effected by the use of motor vehicles by traveling salesmen, the advantages of being independent of railroad schedules and of being able to carry one's samples right to the door of a customer, and I got to thinking over the matter. The newspaper item also mentioned the possibility of having a young man accompany the salesman to run the vehicle, if thought desirable. This put another idea into my head.

It is not at all necessary to go over all the arguments which I brought to bear upon myself before I came to my final conclusion, as they will be seen when the results are told, but it will suffice to say that I determined to purchase a motor vehicle myself for use on the road, under certain conditions. It seemed like the wildest extravagance on the face of it, but I had satisfied myself that it would be a paying investment in the end, and am now happy to say that my expectations have been realized to the full.

My first step was to make careful inquiries as to the cost of a vehicle such as I wanted—for it was necessary, for my purpose, that it be built to order—the body, at least. After much investigating I secured a quotation of \$3,300 on a vehicle such as would fill my needs—a much lower price than I could have gotten on such a vehicle if the novelty of my experiment had not promised much in the way of advertising for the firm from which I obtained the figures.

Made Proposition to the Firm

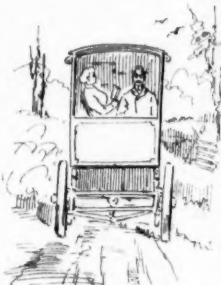
My next step was to approach the head of my firm with a proposition to go to work on a new basis. Taking the figures for the previous two years as a basis, I showed how much my average expenses were and what my average sales aggregated. I then offered to pay my own expenses and work on a commission that would make the cost to the firm less than it was under the old plan. Of course I was questioned as to my reasons for making such an offer, and told them—but only in part. My firm was very strict in its rules about side lines and would under no conditions allow one of its salesmen to represent any other firm. It did not matter that I might have to wait two hours for a train. The firm was, according to its notion, paying for my time and demanded that I should spend it in idleness, rather than to earn a few honest dollars for myself. I knew there were strong arguments in favor of their stand—from their point of view—but there were also arguments against it from my point of view.

I was not afraid to take this stand with the firm, as I had been with them

for ten years, and they knew my value. Besides, I had had several offers from rival firms, and they knew it. Moreover, I offered to guarantee my sales to be as large as in former years, or to give up all side lines and go back on the former basis. There was considerable discussion, but the firm finally agreed to let me go ahead.

Then I ordered my vehicle.

I had carefully studied out its requirements for my purposes, and flatter myself that I got a vehicle as well suited to my needs as it was possible to secure in what was really an experimental one. In the first place I had to carry about 300 pounds of baggage—including the weight of my two trunks—all of which, with the exception of the trunks, had to be carried in my traveling car, as I call it. And there were other provisions.



I had figured it out that there was no really good reason why I should not have my car fitted up with a berth, like a section of a Pullman car. In talking over the matter with my wife—for I had included in my plans the idea of having her travel a great deal with me—she suggested, and later insisted, that the car should have a buffet, similar to those in the Pullman buffet cars. So one was also included in my plans. All this necessitated the building of a large car, necessarily quite heavy, and the fitting of a powerful engine.

For reasons which will be apparent, I decided on a gasoline engine as best suited to my purposes. The one fitted to my car has four cylinders, two of which can be utilized or left idle, as occasion may demand. When all four are in use they give an effective ten-horse-power. It is only occasionally that I have need for more than two, however. It will hardly be profitable to enter into a description of the mathematical details of my car at this time. I may later send you such a description.

When the car was completed it was nothing less than a miniature house on wheels—not that it looked like a house, but that it contained all that was necessary for two persons to live comfortably. My samples were stored away in odd places, every square inch of room being utilized; there was a berth of comfortable size, which, of course, was turned into seats except at night. There was a large buffet where my wife reigned supreme. The same gasoline that furnished fuel for the engine also furnished fuel for cooking. The driving was arranged to be done from the inside, a glass window being provided in front, which, with the rest of the "upper works," could be let down in pleasant weather. I certainly had an ideal car for my purposes.

Precaution Against Domestic Infelicity

I will confess that I had no little trouble in managing it at first, and was not at all sorry that I had insisted on leaving my wife at home during the initial trip. The first two weeks' use, however, made me master of my conveyance, and I was able to make excellent time, covering more towns than when I had been obliged to depend on trains, despite the fact that the maximum speed of my car is only twelve miles an hour. If my wife had been with me on that first trip, I am afraid that the troubles I had with my vehicle, coming at the same time as her trouble in the culinary department, would have been too much to have permitted us to have traveled in harmony in the same conveyance. As it was it needed all my powers of consolation and persuasion to convince her, during her first few days, that the buffet was not a failure and that it would not be necessary to have the car entirely rebuilt so that the buffet could be given four or five times as much room as it occupied. In a short time, however,



she solved the difficulties attendant on cooking a meal in a space three by five feet.

In due course of time we adapted ourselves to this mode of living and learned to enjoy it immensely. After spending most of my business life on the road and eating the fare of all sorts and conditions of hotels, sleeping in questionable beds and getting up at all sorts of barbarous hours to catch trains that were too often late, with just sufficiently frequent intervals of home life to make the return to the road like a return to purgatory after a taste of paradise, our new mode of living seemed ideal despite our cramped quarters. We both enjoyed it so much that my wife accompanied me constantly, and still does so.

How the Scheme Worked

Let me give an idea of our daily routine. We rise at 7 o'clock. My wife gets our simple but wholesome and well cooked breakfast and we sit down to eat together—a rare treat in the old days. If the weather is pleasant the top of the car is down and we may have the shade of some patriarchal oak for a roof and may be the object of the curiosity of some country urchin driving the cows to pasture—for we are under no necessity of stopping in towns for the night, and, indeed, usually prefer to seek the quiet of the country.

After breakfast, while my wife is giving her attention to the "house work," I start the car, and by the time business men are ready to talk business am usually at the door of some customer with my samples. There is no need for him to come to a hotel to inspect what I have. The samples are so arranged that they can be displayed to advantage in the car. The novelty of the arrangement pleases him and I am almost sure to book a better order than I would have done under the old regime. Having finished with him, I start the car for the door of the next customer. There is never the plea of "Don't need a thing and haven't time to go to the hotel." The samples are at his door and his curiosity draws him like a magnet to the car. Thus the morning is put in.

My wife has considerable leisure and frequently offers a suggestion that is the

means of increasing my orders. She has become a great favorite with many of my customers and I am obliged to confess her personality is accountable in no small measure for the success I have attained with my car. Of course she has her fancy work and her books and her letter writing to keep her from feeling the weight of time.

By the time the morning is over we are ready to take a long noontime rest. I usually run the car to some secluded spot. Not infrequently we take some customer with us. And talk about entertaining! If this novel style of hospitality does not count in a business way, I do not know what does.

After dinner I—or we—proceed with business. As soon as we have done in



one town we go to the next. There is no hurrying through with a customer in order to make a train, no waiting around hotels or depots, no debating as to whether or not it will pay to stop over a train in some small town where the prospect for an order is not of the best—in short, none of the thousand and one worrisome incidents that I experienced when I used to be a patron of the railroads.

Quiet Evenings in the Country

When evening comes, we have the choice of going out by some country roadside to have supper and spend a quiet evening by ourselves, of attending some place of amusement, even if we have to go a dozen miles to get there—supper being prepared on the way, some-

times—or of making a call on some one of the many friends whom we have made since my wife has been traveling with me, the novelty of our commercial pilgrimages making us objects of such attraction as to insure us many invitations.

My time is sufficiently taken up with attending to my customers and of looking after the car, and my wife's with her culinary and other duties, so that we do not have a great deal of time to ourselves during the day, consequently run no danger of "getting too much of a good thing," as my wife calls it. We therefore enjoy each others' society in our leisure hours fully as much as if I were a business man who was absent from his wife the regulation number of business hours.

In the winter it is not as pleasant as in the summer, but our gasoline heater makes the car comfortable, at least, and we manage to get along very well. Of course, owing to the weight of the car, I have to use some judgment as to the roads selected, but we experience little difficulty, and certainly I am able to see many more customers and to transact far more business than in the old days.

I am able to make, and do make, more towns than ever before and my sales are nearly 40 per cent greater than in the old days. My two side lines net me a snug sum and what I used to spend in traveling expenses for myself far more than covers the expenses of my wife, myself, and my car together. I am consequently saved all the cost of my wife's living in Boston and have left out of my earnings a surplus fully twice as large as my entire former salary. My car has been paid for by the increased revenue and I have added a little more than the usual amount to my savings account, and look forward to the not far distant day when I will have earned and saved enough to feel independent. But, best of all, both my wife and I have enjoyed ourselves as we have not done since our honeymoon.

If the relation of my experiences shall prove the means of making the life of any of my fellow traveling men more pleasant, the slight trouble that it has been to chronicle them will be fully repaid, and more. Truthfully yours,

THE MODERN SALESMAN.



ORIENT TRICYCLE WITH QUAD ATTACHMENT.

AUTOS IN THE PUBLIC SERVICE

"The Automobile in the Public Service" was recently discussed by Waldon Fawcett in the Philadelphia Saturday Evening Post. For no product of the closing years of the century, he says, is the future replete with greater possibilities than the automobile.

Considering the position occupied by the self-propelled vehicle as a recent topic of discussion during the past eighteen months, there has been a surprising oversight of its possible value to municipalities and the state. That this is being so speedily and effectually remedied just now is due to a sudden avalanche of practical demonstration. Seemingly almost simultaneously the more progressive officials of the national government and a number of the larger cities have enlisted the services of the automobile, and the result, from the standpoint of accomplishments, has been as gratifying as surprising. Indeed, the achievements thus far placed to its credit entitle the horseless carriage to a place beside the locomotive, the telephone and the telegraph as a revolutionary factor in the evolution of the methods of administration of public business.

Its Kindest Mission

Unquestionably the kindest mission of the automobile will be found in the ambulance service. It will insure prompt medical attendance while affording greater comfort for sufferers while en route to hospitals. In point of fact many physicians already use it.

That the automobile is to play a part in the important problem of the cleansing of our cities is proven by the action of a western city in placing an order for several automobile garbage carts. In street-sweeping machines, too, there is room for further saving.

Nothing can be more certain than the total displacement of the omnibus by the autocar, and the close watch which electric railway officials everywhere are keeping on this newcomer in the transportation world demonstrates that they do not

regard competition from that source as an impossibility. In various cities, notably Chicago and Cleveland, there have been projected systems of automobile service wherein the vehicles in service will each carry as many passengers as an ordinary street car and run with the same regularity. As yet, however, none of these projects has materialized.

Expedites Mercantile Delivery

In New York city shoppers have already had an opportunity to observe how the automobile expedites mercantile delivery, and it is therefore not difficult to give credence to the claims made for it as a successor to the bicycle in the delivery of telegrams and special letters. Even in the development of our new possessions the motor vehicle holds a future, for already a line to run regularly across Porto Rico is projected. Finally, the vehicles are to be put to many unique uses, not the least of which will be their employment as a motive power on the Erie canal.

The future of the automobile in public and private service depends much upon its cheapening, but with two hundred manufacturers of the vehicles in this country, and two thousand in Europe, it is altogether likely that the decrease in price will be far more rapid than in the case of the bicycle.

For Purposes of Warfare

The automobile as an engine of war is likely to be first made an established fact by the war in South Africa. The type which the British authorities have selected as best suited for use as a gun platform ought to turn a Maxim machine gun of the ordinary type into a very effective weapon indeed. The automobile in question is capable of carrying the gun and a thousand rounds of ammunition at a speed of almost twenty miles an hour for more than a hundred miles without the necessity of a replenishment of the fuel supply.

In the United States the initiative in the employment of the automobile as a

war agent was taken by Brigadier-General A. W. Greely, chief of the signal corps of the United States army, who recently secured three electric wagons, the maximum speed of which is ten miles an hour. Two of the vehicles are designed to carry the instruments and paraphernalia of the corps, while the third is to provide transportation for officers of the corps detailed for experiments with military balloons or wireless telegraphy, as an adjunct to which the automobiles are to serve. The wagons are fitted with electric lights, and later a searchlight will be provided.

Used in the Postal Service

Appreciation of the benefits of the automobile is likely to come first to the great mass of the people in America as an adjunct to improved postal service. Already most favorable records have been made. In the city of Buffalo, recently, 150 pounds of mail were collected from thirty boxes, including eight package boxes, in exactly thirty-three minutes, the distance covered being slightly more than eight miles.

A kindred field of possible usefulness is found in the recently inaugurated rural free delivery, which has grown in three years from a total of forty-four to nearly four hundred routes, operated in forty states and territories.

There are at present employed in the rural free delivery service almost four hundred carriers, and the aggregate length of their combined routes is something under nine thousand miles. It is apparent that the territory served could be doubled in area were the carriers provided with automobiles.

To farmers this would mean pecuniary benefit, for with late information from the markets promptly available there

would arise countless instances when farm products could be disposed of to better advantage, and, also, there is to be considered the rise of value in farm lands which follows the improvement of highways as a natural sequence.

Already the French government has ordered fifty heavy, high-powered wagons for mail carrying in the Soudan.

For Municipal Use

In the field of municipal administration the advent of the automobile has naturally been made first in the twin departments of police and fire. Ultimately there will hardly be any limit to its usefulness in both. The usefulness of the steam roller, which has come to be regarded as a virtual necessity, probably helped to pave the way for the automobile steam fire engine, which first made its appearance in Boston. Arrangements have been made by other cities to follow this with automobile hose wagons, and hook and ladder trucks.

It is a question, however, whether the motor vehicles which are now being constructed at a western manufactory for the fire chiefs of several cities will not in the end prove most valuable of all. The automobiles destined for this work are, in all the essentials of strength and weight, racing machines, and they are built to maintain a speed of twenty-eight miles an hour over rough roads. Each is to be provided with two acetylene gas lamps and a powerful signal horn. The premise that these vehicles will prove of unusual value is based on the fact that it is frequently necessary for fire chiefs to cover distances at a speed to which horses would prove unequal. The qualities which make the automobile advantageous for fire department work apply with equal force to police patrol work.

THE INDUSTRIAL WORLD

A COMPANY ORGANIZED AT INDIANAPOLIS, BY INDIANAPOLIS BUSINESS MEN TO MANUFACTURE ELECTRIC VEHICLES—ORGANIZATION OF THE CONSOLIDATED MOTOR VEHICLE COMPANY OF PEORIA WITH \$100,000,000 CAPITAL—A DEALER IN SEARCH OF AN AGENCY—TWO OHIO FACTORIES HAVE VEHICLES READY TO DISPLAY

A new automobile enterprise, managed by persons long connected with the bicycle trade, has just been launched. It is known as the National Automobile & Electric Co., and has been incorporated under the laws of Indiana, with a capital of \$250,000, of which \$150,000 is in common stock and the balance in preferred.

According to the charter, the object of the organization is to make, buy and deal in self-propelled vehicles of all descriptions.

At the head of the enterprise is L. S. Dow. Associated with him are A. E. Metzger, Arthur C. Newby, Phillip Goetz, Chas. E. Test, Robert Martindale, Harry T. Hearsey and a number of eastern capitalists.

An Old Bicycle Man

Mr. Dow probably obtained his first experience and his first inkling of the possibilities of the motor vehicle business while he was secretary of the Pope Mfg. Co., a position which he held about two years and relinquished about four years ago. Then he moved to Indianapolis and became associated with Mr. Smith in the management of the Indiana Bicycle Co., which, at that time and subsequently, experimented largely with electrically propelled carriages, and furnished the opportunity for Mr. Dow to complete his education in that line of business. He is a man of extraordinary strength of character, an indefatigable worker and generally regarded as excelled by few as a business man. It is generally understood that he will be president and general manager of the company.

Mr. Metzger is one of the most successful dealers and jobbers of bicycles in the United States, with headquarters at Detroit, Mich.

Mr. Newby is at the head of the Indianapolis Chain & Stamping Co., and, it is said, furnishes a large part of the capital.

Harry Hearsey has been in the bicycle trade over twenty years, and for the past ten years or more has handled large territory for the Western Wheel Works.

Mr. Goetz is regarded as one of the cleverest of financiers. He was at one time associated with Chas. F. Stokes in Chicago, and subsequently joined the Indiana Bicycle Co. as manager of its finances. It was there he became acquainted with Mr. Dow.

Plans for the Buildings

Ground for the factory has been purchased on the south side of Twenty-second street, at the junction of the Lake Erie & Western railroad and the Belt. There are two and three-quarter acres in the site. The purchase extends 320 feet east from the railroad and thence south 550 feet, the curve in the Belt forming the other boundary.

The main building will be 350 feet long, seventy-five feet wide, with two stories. Clarence Martindale, architect, is now at work on the plans, and expects to have them finished this week, when the contract for the construction will be let. Mr. Dow said that the work is to be completed within ninety days, as a large force will be employed. "We will have our vehicles on the market by midsummer," he declared.

Controlled by Western Stockholders

The men named as incorporators will be directors for the first year of the factory's existence. Mr. Dow will have charge as president and general manager. Arthur C. Newby will probably be vice-president, and Philip Goetz will be secretary and treasurer. Although eastern capital is heavily interested, the management will be controlled by the western stockholders.

Mr. Dow said that their main building will be as modern as any factory owns and 200 men will be given employment in

it. He is of the opinion that they will be able to get good mechanics in Indianapolis and the surrounding cities.

Arrangements are now being made for temporary quarters in which to make the patterns, molds, tools and dies that will be required. All of these details will receive attention while the construction of the main building is going on. Parts of the automobiles will be perfected in the meantime so that there will be no delay in getting the vehicles on the market within a short time after the factory is finished. Contracts have already been let for the machinery.

The capacity of the main building, Mr. Dow estimates, will be ten vehicles a week, making it the second largest concern of the kind in the country.

The promoters of the new enterprise were unable to say how many men they will employ, but the number will be large.

"It should be remembered," said Mr. Dow "that such a concern will employ the highest class of labor, which means much for Indianapolis."

Some of the progressive men whose names stand out prominently as leaders of thought in cycle construction no longer find attraction in that branch of mechanics. One of these is Charles E. Duryea, another is Frank H. Bolte. Both have devoted much of their time and thought in late years to the development of motor vehicle mechanism and design and both have contributed to the successful features of vehicles which are about to be exploited by a company composed of clever business men.

Improvements on Duryea Ideas

When the bicycle trust threw out of active employment some of the best people formerly connected with the Peoria Rubber & Mfg. Co., it left them in the fortunate position of having approached very nearly to the conclusion of a series of exhaustive experiments in the motor vehicle line. They had been operating, to some extent, under the Duryea patents, cutting, trying, and altering in such ways and to such an extent as their experience showed to be necessary or desirable. In the end they had evolved such improvements that one would have been puzzled to discover, in the final struc-

ture, the original features or the ground work upon which it was erected.

This experience—a valuable asset of the old company—was not a part of the purchase of the bicycle trust, so that after the sale the owners were enabled to carry their special machinery, patterns and experience into new quarters. This they did by obtaining possession of the plant once occupied by Rouse, Hazard & Co.

Have Secured Valuable Patents

Their time being entirely their own, the Messrs. Sieberling, Butler and Bolte proceeded, with energy and dispatch, to the development of the plans previously outlined. They secured the co-operation of J. K. Pumpelly, the owner of valuable patents on storage batteries who is reported to have received from a Philadelphia syndicate nearly \$20,000 for options without having effected a sale. Another owner of patents who became associated with them is a Mr. Mockler. The principal object of securing the co-operation of these gentlemen was to enable the factory to produce vehicles of all kinds.

The latest movement is the organization of the Consolidated Motor Vehicle Co., incorporated under the laws of New Jersey, with a capital of \$1,000,000, for the manufacture of vehicles propelled by steam, gasoline and electricity.

This company has acquired the right to operate the Duryea patents east of the Rocky mountains, except in connection with heavy wagons.

It is understood that people largely interested in the Grant Locomotive Works are extensive stockholders.



DEALER WHO WANTS AGENCIES

Lud C. Havener, one of the good old reliable cycle dealers of Worcester, Mass., is making plans to enter the motor vehicle business and has sold two automobiles. He finds difficulty in securing supplies. A few manufacturers, he says, are beginning to deal with agents and one large manufacturer won't attempt to put his own goods on the market. He deals entirely through agents. Mr. Havener thinks that when the pres-

ent demand is partially satisfied the manufacturers will be glad to treat with agents. He is laying his plans for that time and intends to be in on the ground floor when automobiles are sold in Worcester.

MUNGER VEHICLE TIRE CO.

In the Motor Age of December 14 considerable space was devoted to a description of a new departure in tires, designed specially for heavy vehicles, and which are described in the patent as combination pneumatic and cushion tires, being the invention of L. D. Munger, well known to the bicycle trade. The estimate of the value of the invention therein contained has been confirmed by the fact that capital in New York was readily found to organize the Munger Vehicle Tire Company, capital \$600,000. Wm. Ivins is the president; William A. Towner, secretary and treasurer, and L. D. Munger, vice-president and general manager. Among the directors are William M. Ivins and Benjamin J. Downer of the Rubber Goods Company.

The company has taken possession of a factory at Hartford, Conn., and is preparing to fill orders.

The machine entered by A. L. Riker to compete for the James Gordon Bennett cup is to be equipped with Munger tires.

Patents have been taken out in Canada, France, Great Britain, Belgium, Germany and Austria-Hungary, but have not yet been disposed of.

ELMORE VEHICLES ARE READY

An Ohio paper says that the first automobile manufactured by the Elmore Mfg. Co. has been in operation on the streets for the past few days and has attracted a great deal of attention and much favorable comment. It is a light and handsome vehicle and is driven by gasoline.

NEW INDUSTRY AT MARION, OHIO

Marion, O., according to a local paper, is to have another manufacturing concern, the Stringer Automobile Co. The company will be incorporated with a cap-

ital stock of \$20,000, the greater part of which has already been subscribed. When the company first begins the manufacture of the automobiles the motors will be purchased from motor companies and the carriages and other machinery will be manufactured by the company in Marion. After the company is in good running order it expects to manufacture the entire equipment of the carriage.

ABOUT THE WOODRUFF SYSTEM

The Whitney Mfg. Co., of Hartford, Conn., is in receipt of valuable testimonials of the Woodruff system of keeping from automobile builders. Among the leading manufacturing concerns which have adopted the system are: The Columbia & Electric Vehicle Co., Hartford, Conn.; the Electric Vehicle Co., New York, and the Locomobile Company of America.

FROM CYCLES TO AUTOS

If the plans of John Wilkinson, of Syracuse, inventor of a gasoline motor, mature, the factory formerly occupied by the Barnes Cycle Company may be used for the manufacture of automobiles. One of Mr. Wilkinson's carriages has been given a successful trial, and it is reported that sufficient capital has been secured to start the industry.

NOTES OF INTEREST

Wallace Stebbins & Sons, of Baltimore, have filed a bill of complaint against the Crouch Automobile Mfg. & Transportation Co., asking that a receiver be appointed to take charge of the corporation for the protection of its creditors. Judge Sharpe ordered that a receiver should be appointed on February 26, unless cause to the contrary was shown on or before that date.

John & Paul Bowman, of Bellefontaine, O., are building two motor vehicles under contract. When they have finished they expect to operate a factory in Chicago.

Brown Bros., of Aberdeen, S. D., have purchased an automobile for business purposes. Ralph Brown took it from Chicago by road.

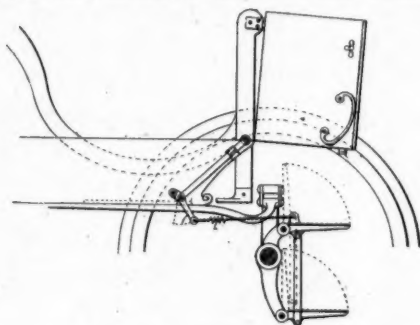


WHAT THE INVENTORS ARE DOING

A CLEVELANDER DEVISES SWINGING DASHBOARD FOR MOUNTING INTO CARRIAGE FROM FRONT—HERRMAN'S COMBINED DIFFERENTIAL AND FRICTION GEARS—PERMANENTLY INFLATED VALVELESS TIRES

SWINGING DASHBOARD AND STEP

No. 643,257, to Elmer A. Sperry, Cleveland, O. This is a device which, while appearing at first glance to be somewhat



freakish, may really be destined to fill "the long felt want."

After calling attention to the unpleasantness incident to mounting into a vehicle over front wheels of the knuckle steering type, the patentee describes his invention as a device for overcoming the attendant difficulty.

Briefly, it is a hinged dash swinging gatewise and acting in conjunction with a folding step attached to the front axle at or near its center, the step opening and closing simultaneously with the gate, as shown in the accompanying illustration.

As described, the idea is intended only for vehicles with a non-swinging forward axle, and the dash or gate and the folding step may be used either separately or together.

FENDER TO PROTECT MECHANISM

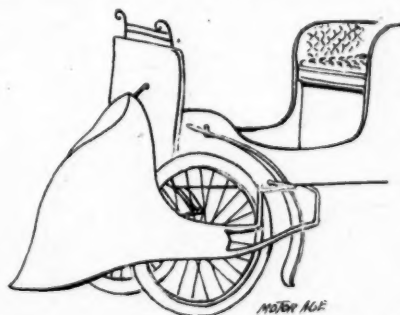
No. 643,370, to Cassius E. Belcher, Linden, Pa.—The patentee claims to have invented a new and useful fender for automobiles. It is to be hoped that he is not superstitious, for his application was made September 18, 1899, and his

patent is dated February 13, 1900, and his device can hardly stand any serious influences of that sort.

Several forms are shown, the one in the illustration being a fair sample and the most simple of the lot. It is described as being designed to protect the propelling mechanism of the vehicle in the event of a collision and also to plow into or separate the air so as to reduce the friction against the air and thereby increase the speed of the automobile.

A description of the device is unnecessary, as the illustration shows the construction.

A point worthy of note is that nothing is said of it as a protection for the unwary mortal who may come in too sudden and violent contact with it, and from general appearances there would



not be enough left of the aforesaid mortal to be worthy of mention except in the way of an obituary notice.

DIFFERENTIAL AND FRICTION GEARS

No. 643,130, to Thaddeus W. Herrmans, of Chicago, Ill.—This patent covers a most unique adaptation of the well known form of differential gear, whereby any desired speed, both forward and

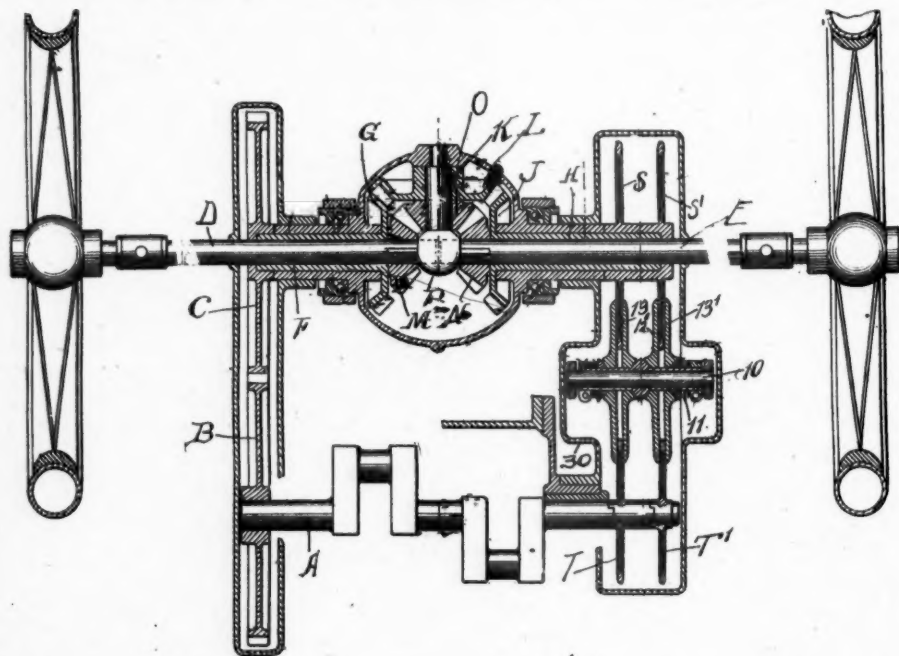
backward, within the capacity of the motor, may be obtained.

It is a combination of differential and friction gears in which the change of speed is made by merely moving an idler in conjunction with the friction disks.

In the particular form of construction and arrangement illustrated, to which, however, the invention is not limited or restricted, the shaft to be driven is composed of the independent sections D E. Upon section D of the shaft to be driven is mounted to loosely revolve a sleeve F, and formed with or carried by said sleeve F is a bevel gear G. Upon section E of

driven shaft, and mounted upon stud K to freely rotate thereon is a gear O arranged to mesh at opposite sides with gears M and N, respectively.

From the foregoing description it will be seen that when rotation is imparted to gears G and J in opposite directions and at the same speed the gear L intermeshing therewith will be axially rotated while the supporting stud K will be held against movement. If, however, the relative speed of rotation of gears J and G be varied, that is, if one of said gears be rotated faster or slower than the other, to compensate for such variation the stud



the driven shaft is similarly sleeved to revolve freely thereon sleeve B, having formed thereon, or carried thereby, a similar bevel gear J, corresponding in size an arrangement to gear G.

Suitably arranged with the axes thereof at right angles to the axes of the driven shaft are one or more studs K, carrying a bevel gear L, arranged to intermesh at opposite sides with said bevel gears G J, respectively. Suitably splined to rotate with section D of the driven shaft is a gear M. Similarly a gear N of corresponding size and arrangement is splined to rotate with section E of the

K will be rotated about the axes of the driven shaft, and in a direction corresponding to the direction of rotation of the gear G or J which has the greater speed, and the travel of the said stud K about the axis of the driven shaft through the engagement of the gear O thereon with the gears M N on the sections D E of the driven shaft effects a rotation of the driven shaft and the speed of rotation thus imparted to the driven shaft will be equal to one-half the difference of speed of the gears G J. Thus it will be seen that by imparting a greater speed to gear J the driven shaft

may be operated in one direction and by imparting the greater speed to gear G said driven shaft will be actuated in the opposite direction, so it will be readily seen that the speed and direction of rotation of the driven shaft may be easily regulated by merely varying the speed of relative rotation of the gears G and J.

Any suitable or convenient arrangement of gearing may be provided for rotating the gears G and J, the essential feature of driving power for said gears being the capability of varying thereby or therethrough the relative speeds of rotation of said gear.

The patentee shows a simple and efficient arrangement for accomplishing the desired result, but to which he does not limit his patent.

In this device a gear C is suitably connected to rotate with sleeve F, and one or more gears S S' are suitably connected or mounted to rotate with sleeve H.

Reference sign A designates the main drive or power shaft. This shaft may be the crank shaft of a steam or other motor, or may receive rotation from any suitable source of power. Upon one end of said shaft is mounted gear B, arranged to mesh with and drive gear C, thus effecting a rotation of the bevel gear G at a speed dependent upon the speed of rotation of shaft A. Similarly, upon the opposite end of shaft A is mounted one or more gears T T' to revolve with said shaft. The gears S S' and T T' are preferably in the form of friction gears. Upon a pin or stud 10, suitably supported, is mounted a loose sleeve 11. Upon this sleeve are mounted one or more pairs of friction disks 12, 13, 12' and 13', corresponding in number of pairs to the friction wheels S S' and T T'. Thus it will be seen that the friction disks T T' constitute friction drivers for the plates 12, 13, 12', 13', which in turn transmit the rotation thus imparted thereto to the gears S S'. The members of each pair of intermediate friction plates are held in suitable and proper relative arrangement in any suitable manner.

In order to secure the desired variation in speeds of relative rotation of gears G and J it is only necessary to move pin or stud 10 toward or away from the axis of rotation of the driver disks T T'.

It will therefore be readily seen that a speed variation is secured between the constantly driven disks T T' and disks S S', while the relative speeds of gears B and C will remain constant. By moving pin or stud 10 toward the axis of the driver disks T T' it will be seen that the contacting peripheries of said driving disks approach nearer and nearer to the center or axis of rotation of the intermediate disks 12, 13, 12', 13', thus changing the relative speed of rotation of driver disks T T' and said intermediate disks by increasing the speed of the intermediate disks. The same movement of stud 10 will cause the peripheral contact surface of S S' to approach the periphery of the intermediate disks, thus changing the relative speeds of rotation of the intermediate disks and of the driven disks S S' by increasing the speed of the latter, and hence securing a double increase in speed from the driver disks T T' to the driven disks S S'. Similarly when stud 10 is moved in the opposite direction the reverse of the above operation takes place. In this manner by merely moving stud 10 in one direction or the other the relative speed of rotation of the bevel gears G and J may be regulated.

Stud 10 may be mounted for movement in any desired manner, and its regulation placed at the convenience of the operator. The gears M N and O also act in the capacity of the ordinary differential gear, thus serving a double purpose.

PERMANENTLY INFLATED TIRES

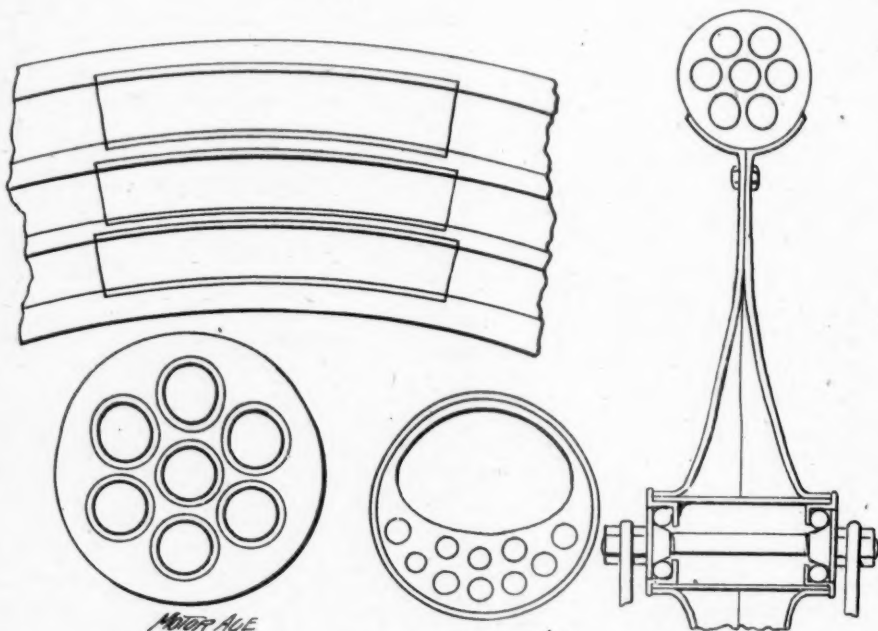
Nos. 642,776, 642,775 and 642,777, to Jas. C. Anderson, of Highland Park, Ill. —Mr. Anderson has secured government protection on a varied collection of tire inventions which, while now seeming premature and impracticable, may, at some future time when the so-called porosity of rubber has been overcome and liquid air is better understood, bob up to make trouble for other inventors working toward similar ends.

The principal idea embodied is that of a permanently inflated tire which shall be inflated during the process of manufacture by the introduction of liquefied air, liquefied carbonic acid gas or calcium carbide and water.

Two styles of tire adapted to this form of inflation are described, one being cylindrical in cross section with a series of circumferentially disposed air chambers or tubes preferably arranged relatively to each other as shown, but in all cases so that a portion of the solid body shall intervene between the principal air chambers and to also surround and confine said chambers or cells in a group, the object of this arrangement being to prevent deflation by dividing the liability of puncture, it being presumed that the injury of one air chamber would incapacitate the tire to but a limited extent.

of the air chambers will not be interrupted by an inward projection or shoulder of the ends of the tubes.

In securing the tubes in place one end of the body, being first coated with a suitable cement, is forced into the enlarged cylindrical recess in one end of the tire. When all of the tubes have been thus located within one end of the tire, the opposite end thereof is placed so that the projecting ends of the tubes which have previously been coated with suitable cementing material, will enter the recesses in that end of the tire, and the latter is forced toward the opposite



ANDERSON'S TIRE.

A point in connection with this tire to which particular attention is given is the method of joining the ends. In so doing, a number of short tubes of rubber or similar material are employed, their internal diameter coinciding with that of the several air chambers; consequently the air chambers are enlarged at their meeting ends to a degree equal to the thickness of the cylindrical wall of the tubes so that the continuity and diameter

end thereof and over the ends of the tubes into position, as shown. The ends of the tire are also coated with cement, so that when dry they will join. Just before joining the ends of the tire a predetermined quantity of liquid air or its equivalent is introduced into each of the chambers and when the juncture is completed the contained air will have become highly expanded and press with equal force against the walls of the air

chambers in such a manner, it is expected, that the circular contour of the tread will not be disturbed nor distended in the form of a lump or projection as would be the case if the joining tubes had thin ends extending shoulder like into the air chambers.

Mr. Anderson apparently reached the above idea by stages, as letters patent No. 642,775 cover a tire built on the same idea of inflation in a less radical form, being a combination of the ordinary air chamber, inflated through a valve, and a series of small permanently inflated circumferential chambers located between the large chamber and the tread.

In the matter of construction it is suggested that in joining the ends of the tube the tire be so placed that the point of junction be uppermost, the liquefied air thus flowing into the lower part of

the tire and if it be found necessary in order to prevent premature expansion of the liquid air charge during the time required to make the joint, this part of the tire may be submerged in a bath of liquid air, thus preventing the expansion of the liquid air contained in the various chambers.

Inasmuch as the permanent inflation of the air chambers, particularly in the first described tire, prevents its ready removal from the wheel rim, a specially constructed wheel covered by letters patent No. 642,777 is described.

The illustration shows a cross section of this wheel, a detailed description of which is unnecessary, the principle being that the disk forming one side of the wheel may be removed, thus releasing the tire which rests in the seat formed by the flanges at the periphery of the disks.

VIEWS OF A DOUBTING DAILY

Memories of the Pennington airship—the aerial traveler which was on view in the old Exposition building many years ago and which should have revolutionized everything in sight, but fell by the wayside—have been revived by the recording of articles of incorporation for the Pennington Aerial Mail, Express & Construction Co., says the Chicago Daily News. The incorporation, it is said, was only in accordance with the statutory rules requiring such documents to be taken out at certain intervals and it is not known whether the original incorporators wished to keep their charter alive, or to sell it to some other concern.

Pennington, inventor of the airship, came to Chicago nearly ten years ago and, with a flourish of trumpets, gave out information concerning his wonderful aerial vehicle right and left. He built a sample ship and the vessel was put in the Exposition building.

Critics and capitalists were asked down to see it one day. In the dim half-light which pervaded the grim old building they saw a thing that looked like a compromise between a tired cigar and a heart-broken sausage. At a signal from the inventor the machine rose and

ascended to a height of perhaps thirty feet and then cavorted up and down the air currents for awhile. Some of the crowd were cruel enough to hint at invisible wires; others remarked that any bag of gas would have risen and gone through the same maneuvers.

The exhibition was not a pronounced success, but Mr. Pennington refused to down. He appeared at Mount Carmel, Ill., where an airship factory was to have been built. It never materialized to any great extent and for years Pennington and his airship have been almost forgotten.

Possibility that the Pennington incorporators wished to sell their charter only goes to show the existence of a rather odd and amusing trade in charters. It costs some time, trouble and expense to get a charter, but old charters, monuments to enterprises which long since sizzled in the julienne of failure, are always to be had quite cheaply. It is thought possible that the Pennington airship charter, descending from its ethereal realms, may yet serve to help out the designs of some one who has a new scheme for canning the succulent pig's foot, or may save a lot of expense to the man who thinks he can manufacture illuminating gas out of superannuated pillowshams.

A HARVEST FOR PARTS MAKERS

The following letter from a bicycle assembler to an English cycling contemporary doubtless voices the sentiments of a large number of machinists who have for some years been engaged in expert bicycle building and repair work in this country and are now anxious to embark in the automobile line in a small way, but find themselves balked so far as profitable production is concerned by their inability to readily secure the necessary line of parts and fittings, exclusive of motors. Many experimenters, too, are delayed and put to heavy expense by the lack of ordinary parts and connections that can be easily and cheaply made by almost any parts factory in the country. The most of such parts are not difficult to make, as they consist largely of L and T connections and various angles, axles, hubs, sprockets and chains, etc. The substance of the letter referred to is as follows:

Do the fittings makers realize that, while they are glutting the market with a supply of cycle parts, which are destined to lie in their warehouses as dead stock in many instances, there is already a demand for a set of motor cycle frame components—a demand which will astonish the first enterprising firm that places them within reach of the assembler?

I am not unaware that certain firms profess to supply motor frames ready for the motors, but one look at the ridiculous and prohibitive prices is enough to scare the ordinary cycle agent.

In France, enterprise and energy take the place of English apathy, and the consequence is that makers there are trying, but trying in vain, to supply the great demand that obtains even at the present inflated prices. Many a time when I have protested against our inactivity I have been met with the same stale answer, "Our directors are not going to waste the shareholders' money in expensive experiments." At the same time they forget that their plant is engaged turning out cycle parts in excess of the demand. We all know what that means, and so does the official liquidator.

The question to consider is this: Do the parts of a motor cycle require to be made so very differently to ordinary cycle parts? No! With little alteration, the lugs, axles and parts of a motor frame could be turned out with the tools which at present are

making cycle parts. It is simply a question of greater strength, increased diameter of tubes, greater accuracy of general fitting, and less worship at the shrine of light weight. Given reliable parts, comprising a strong bridged axle, fitted with differential driving gear, bearings, etc., bottom bracket for pedals to assist on hills and starting, also the necessary lugs, which are not many, ball head (tandem type), a good assembler could turn out tricycles to order to carry two people readily, including upholstered rear seat for a lady passenger.

The complete tricycle can be produced and one a week could easily be made.

I am at present making a light motor tandem tricycle to a design of my own. I have to make my own patterns and machine my own castings in a six-inch lathe. I find obstinacy and prejudice to fight against whenever I write to a component firm for a part which they would willingly supply me if I wanted it for a cycle, but when I mention the name of motor it acts like magic and they either refuse to supply me or disclaim all responsibility in case of accidents. To them the name of motor is a sort of bogey suggesting all manner of accidents and unthought-of evils.

The people want motor vehicles, but they are not all millionaires. Those few firms who advertise motor cycle frames are making hay while the sun shines, forgetting that if they were not so greedy the sun would shine far more than at present (metaphorically speaking).

The most particular part about the tricycle frame is the bridged axle and differential driving gear; these must be really well and strongly made. With machinery such as at present exists in several factories and in a state of idleness, these could be turned out very cheaply in quantities. I am driving my tricycle with chains instead of toothed wheels; there is less noise, and an absence of the objectionable grinding sound. Of course the frame must be suitably designed to carry the chain wheels. One great point to be observed, is to have all the parts get-at-able; simplicity of construction is the key to success. All threads of screws must be a tight fit, as the vibration is considerable. It is better to err on the side of strength at first till you see what your frame is capable of standing.

I wish to prove to component parts makers that there will be a demand if they will supply motor frame components on the same scale of profits as they make on their cycle fittings. Every Tom, Dick and Harry is putting cycles together, but a motor frame would be a bit beyond the reach of

the ordinary assembler for some time to come. And as for the shoddy firms who supply parts of a kind, at a price, so soon as they begin to meddle with the motor trade, so soon will those who buy their stuff be taught a severe lesson, for if there is one thing that needs good workmanship more than another it is a motor driven machine. Having had considerable experience,

I would earnestly warn my brother assemblers to put together no parts in the future that are not hall marked with the name of a good firm. Remember that an accident happening to a motor cycle traveling, may be at sixteen miles an hour with two riders on, is a far different thing to a cycle giving away, and the result would probably be far more serious.

PLANS FOR THE BENNETT CUP RACE

New York, Feb. 17.—Announcement was made last December that the Automobile Club of America had become a challenger for the Gordon-Bennett international cup and had deposited the \$600 necessary to make good its challenge. Beyond the mere statement of the challenge and very general and indefinite references to it and the preparations being made on this side of the pond to try to place the trophy in Uncle Sam's locker alongside the Queen's cup, the Wimbledon shield, the America cup and other international scalp equivalents now reposing there to the glory of the great American nation, little definite information has found its way into print, so that the Yankee people at large know very little about this new field of international competition, into which we have shied our cap.

Accordingly, a Motor Age man sought out to-day Albert C. Bostwick, chairman of the committee of the Automobile Club of America, having the making good of the challenge in hand, and found him in his private office at the well known banking house of which he is special partner.

Mr. Bostwick seems a rather young man for such heavy business and international responsibilities. But one does not need more than ten minutes' talk with this bright-eyed, enthusiastic, hustling American of surely not more than twenty-five to convince him that he is most capable of guiding to success any enterprise to which he lays his hand. Mr. Bostwick is an enthusiastic automobilist. At almost any hour of the business day

his motor carriage may be seen standing before the banking house, having been driven down by the owner, awaiting his return trip.

"Oh! yes," said he, "our money is up to make good our challenge and we are in the game for business. You know we are entitled to three vehicles.

"Have we done anything toward selecting the American representatives? Of course we have. Alexander Winton of Cleveland and A. L. Riker of New York have already been chosen.

"No, it was impracticable to have an open competition. These gentlemen had spent thousands of dollars to prepare for the challenge and it would not have been fair to supplant them by others. There is a third one to be chosen, however.

"We have several candidates for the third place and the committee will arrange the competition.

"A public trial? By no means. We certainly do not intend to disclose to our competitors the speed of our vehicles. That would be foolish. And Mr. Winton and Mr. Riker will take pains to give no speed points away when they go into practice abroad."

"The trial races will probably take place on a track—perhaps Berkeley Oval. They will be of at least five or six hours' duration, for a vehicle would have to last at least that long without a dismount to stand any show of winning.

"The race has been set for June 14 and the distance will be between 340 or 500 miles. It will be on the French roads but the exact route has not yet been

fixed. Should we win the cup it would be our privilege to name the next course. It would probably be in France, for that country is the only one that will give the necessary right of way over the roads for a race of this sort. Belgium, Great Britain, Italy and France have entered.

You know Mr. Bennett gave the cup to the Automobile Club of France for a starter. I shall go over in April, taking an American vehicle with me. I shall tour extensively, visit all the factories and represent the Automobile Club of America at the contest."

RICHMOND AUTO FRANCHISE

A New York syndicate, represented by Captain Pizzini, has applied to the city fathers of Richmond, Va., for the privilege of operating a system of automobiles on the streets of that city. A special committee is preparing an ordinance entitled, "An ordinance granting the right to certain parties to use the public streets, alleys and parks of this city for vehicles of all kinds drawn or propelled by other than animal power."

Incorporators named are Andrew Pizzini, Jr., J. H. Carlisle, Albert Davis, V. Gilpin Robinson, J. P. Evans and such others as may accept the provisions of this ordinance, who are to form a corporation to be known as the "Old Dominion Motor Carriage Company."

Authority is asked to use the streets, alleys and parks of the city for the purpose of running cabs, carriages, trucks, and other vehicles propelled by other than animal power, for the transportation of freight and passengers, and for other purposes. Section 2 stipulates that the corporation shall be subject to the ordinances governing vehicles drawn by animal power.

Section 3 would confer important powers. It reads as follows: "Said parties, or corporation, is authorized and empowered, in case said vehicles should be propelled by electricity or compressed air, or any other power not self-contained, thereby requiring terminals at different points for replenishing reservoirs, to establish said terminals, and to erect and maintain lines of poles, wires, ducts, or other necessary adjuncts to

said business, to and from said terminals, and any other points, along, over and under the public streets, alleys and parks of this city, and to establish an electric call system or telephone communication between the said points."

The succeeding section agrees that the construction of said lines of poles, wires, ducts, etc., shall be done in conformity with the rules and regulations of the Southeastern Tariff Association, and such other regulations as may be established by the committee on streets, under the supervision and direction of the city engineer.

SAD FATE OF A DRIVER

An automobile driver, in full uniform, strolled into the cabman's ball, at Central Hall, 22nd street and Wabash avenue, Chicago, recently. Unconscious of danger, he walked boldly out into the center of the floor. The cab drivers were too astonished by this audacity to act for fully a minute. For a short time the automobile driver looked scornfully at the hackmen. Then the cabmen awoke to action. Half a dozen of them seized the intruder and rushed him to the door. The door closed on the evicting party and the dancers inside will never know exactly what fate overtook the motor vehicle man. When the noise of breaking glass and a series of heavy thumps on the stairway ceased the volunteers returned. They failed to explain what had become of the "automobily" swell, but their faces were eloquent with satisfaction.

FROM THE FOUR WINDS

THE WORK OF A YEAR

Twelve months ago the park commissioners of Chicago were engaged in a struggle to prevent the operation of automobiles on the boulevards and in the parks. Last week they issued instructions to the president to investigate the practicability of automobiles for the superintendent and captain of park police. It was the opinion of the majority of the commissioners that they could be operated cheaply and successfully. Thus does the inevitable result of progress assert itself.

Despite the fact that the Chicago post-office authorities announced themselves ready to contract with a maker of automobiles for the collection of mail matter, the contract with Harry Segar, who supplies the vehicles and horses at present in use, has been renewed. None of the makers of automobiles made a bid, possibly because of the stringency of the conditions imposed.

The Washington department, however, has demonstrated the practicability of motor vehicles in the service.

One of the longest routes in the city was selected, and the automobile covered the distance in thirty-two minutes, making twenty-seven stops.

The regular time for a collector's trip over this route is an hour and three-quarters, while the territory is covered in an hour and twenty minutes by a man with a vehicle drawn by a horse. One of the superintendents followed the automobile over the route so as to be sure no boxes were overlooked and that the test was absolutely fair.

Postmaster Merritt, who suggested the test, is favorably impressed with the result and believes it will be but a short time when automobiles will supersede the collection of mails by men on foot, mounted on bicycles or in vehicles drawn by horses.

If these tests show the same results in other cities, which are not so well paved as Washington, Postmaster General

Smith will ask Congress for an appropriation to establish a service of this kind wherever it can be utilized.

A REVIEW OF RESULTS

Reviewing the results of French experience with automobiles, M. G. Forestier concludes that the steam engine best meets the requirements where there are sudden demands for power, as on steep grades and in starts on upward inclines, while an internal combustion motor is satisfactory on fairly level roads, and has much less weight. Motors of both classes have shown increased economy since the early tests of 1897, with the prospect of further improvement. Details of the trials of light vehicles cannot be easily summarized, but the cost of running a cab may be placed at 19.26 francs per day by horse, 16.27 francs by gasoline, and 18.48 francs by electricity, while the corresponding figures for a delivery wagon are 16.72, 12.28 and 14.80 francs. Interest, depreciation and the maintenance of electric accumulators are included.

A PRETTY FAIRY TALE

It was automobile against horse in a desperate race along Michigan avenue, and mechanical ingenuity triumphed. The start of the race was at Michigan avenue and 43rd street, Chicago. A saddle horse, whose owner had carelessly left him untied at the curb, got the notion into his brain that he needed more exercise and started off at a canter. He passed the horseless carriage at the corner. It seemed as if the vehicle of the secret power had been "left at the post," in the parlance of the track.

The motorman, perched high in the air, gave a jerk to the power switch, doubling the speed of the conveyance in half a dozen lengths. He said a few hasty words to the occupants, apparently receiving their approval, and with another

er movement of his hand further increased the speed of the vehicle. The horse's lead was half a block at Forty-fifth street. In the next half a block his advantage had decreased. It was plain to the spectators of the interesting contest that he was destined to be defeated.

Muddy cross streets, in which the automobile would ordinarily not have been as fast as a wheelbarrow, were passed, but the horse did not turn. He seemed overconfident. When Forty-seventh street was passed the dashboard of the automobile was at the horse's flanks. Steadily the vehicle drew up alongside the fleeing animal. The horse made a last desperate rally, but his spurt was short-lived. Midway between Forty-seventh and Forty-eighth the motorman had secured his much sought position and a man reached forward from the front and grasped the dangling reins. The horse, badly beaten, meekly submitted to capture.—Chicago Chronicle.

QUALIFYING FOR LICENSES

City authorities of Chicago have lately decided on a series of tests through which an applicant must pass before he is granted a license to operate a public motor-driven conveyance. Among other things, applicants must have good use of both hands and arms; also both legs and feet. They must be able to pass a satisfactory test for color blindness, have good hearing and be free from epilepsy. The first examinations were made last week. City Electrician Ellicott is chairman of the board of examiners, Health Commissioner Reynolds and City Engineer Ericson being the other members. Dr. Collins of the health department conducted the physical test. All applicants were compelled to sign blanks before they were allowed to take the examination. The Illinois Electric Vehicle Transportation Co. was well represented by its operators. In almost every case satisfactory answers were given to the numerous questions concerning the operation of the machines. The men were asked if they had read the city ordinance concerning the examination and licensing of automobile drivers, what precautions

they would take on approaching a bridge or crowded street, in what distance the machine could be stopped when running eight miles an hour, and many other questions which are expected to show the competency of the driver.

THE VALLEE RACING MACHINE

The front cover illustration this week shows one of the types of European racing automobiles of whose speed such startling accounts have reached America. This particular machine is a Vallee wagon owned and operated by Dr. Lehewess. The most striking feature of its general appearance is the peculiar boat shape form of the body and the wind shield or protective covering over the front end. For the purpose of lightening these racing vehicles as much as possible consistent with the requisite strength to carry the weight of motors designed to develop great horse power and to stand the terrific stresses on the working parts, the French constructors have made extensive use in the bodies of partinium, an alloy of aluminum and tungsten whose specific gravity is almost as light as that of aluminum, but whose strength is very much greater. While speed depends very largely upon horse power, it does so only when the other conditions of weight of vehicle, number of revolutions of motor, the gearing and reduction of friction in the moving parts as well as in the body of the carriage are substantially equal. The Vallee racing machine develops twenty-four horse power, but has not proved successful in winning races, while the more victorious automobiles develop only sixteen horse power, which at the present time appears to be the most popular maximum for racing vehicles. The failure of the Vallee car may be partially attributable to the fact that it has but single belt drive and has no speed change gear.

CALLS IT A FREAK

The Chicago Chronicle regards the automobile as an unreasoning, irresponsible, good-for-nothing. "The horse," it says, "could be reasoned with. He had ears to hear, eyes to see. Food would in-

crease his pace or lull him to repose. Drink cooled his fire and calmed his spirit to even the ways of children. If he would not harken to protest, entreaty was not always futile. These failing, he was susceptible to moderate coercion judiciously applied. He discriminated at times between friend and foe. The instinct of self-preservation often protected his fare as well as himself. He generally knew the way to his crib. Sleep had allurements for his weary muscles. He felt small appetite, and that on occasion only, for broken glass. He discerned a policeman opportunely if the truncheon flourished to cudgel his brain.

"Not so the automobile. No ears to hear nor eyes to see hath it. It fears no foe, rewards no friend. Its bowels are without compassion for childhood; its soul indifferent to prayer or protest. It knows neither hunger nor thirst nor hath need of rest so long as its fuel is aboard and its gearing taut. A thousand-dollar plate glass is a morsel to its capacious stomach; scrap iron it consumes as lightly as daisies in their period. Policemen it dreads not with clubs nor boys with fireworks. Only superior force will check its mad career and right of way it takes by virtue of inherent power and total irresponsibility.

"The automobile is a freak."

Yes; they talked in a similar strain about the bicycle twenty years ago!

SYNDICATES COMBINE

A dispatch from Philadelphia says that the present week will probably witness the completion of negotiations for the combination of the Electrical Vehicle company that is controlled by the Whitney-Widener-Elkins syndicate and the Anglo-American Vehicle Company, of which William W. Gibbs is president. The capitalization is expected to be \$50,000,000.

"We have come to the point," said Mr. Gibbs, with reference to the pending consolidation, "where we can go ahead, and have decided that a combination of interests will be advantageous. The automobile industry is still in its infancy, and there is yet much to be done. We

do not mean to limit the new combination to the companies that are now negotiating, but shall endeavor in the future to take up whatever new appears."

FARES BECOMING CHEAPER

The constant tendency of the new motive forces is to cheapen fares. Until some "combine" can be organized that is big enough to control everything that moves on wheels this tendency will continue. No combination can quite forestall the possibilities of new labor-saving inventions. But how shall we get along in a horseless world? How will our cities seem when every vehicle in the streets moves on silent rubber tires and the stillness of death pervades the now noisy streets? But before we get that far some other new and startling invention may sweep the whole board. Progress is eternal.—Boston Globe.

BELIEVES IN LIQUID AIR

Professor Tripler, one of the most ardent believers in the possibilities of liquid air, believes it can be successfully applied to automobiles. "I have," he says, "an automobile now under construction, to be run by liquid air. What is the principle? The absorption of the outside heat by the liquid air. The air has five times the motor power of compressed air, so that if a given quantity of compressed air will run an automobile twenty miles, the same quantity of liquid air will run it 100 miles. Of course, this use could only be possible where there was a plant, but I suppose there will be plants in Chicago, and ultimately in Milwaukee."

TO ESTABLISH SUPPLY DEPOTS

It is reported from Italy that the members of the Automobile Club of Turin, the Automobile Club of Milan, and the Automobile Club of Venice have decided to take united action with a view to establishing petrol stores at regular intervals on all the principal Italian roads. At present the scarcity of petrol depots is a source of great inconvenience to the chauffeur who tours in Italy, and if this scheme of establishing stores at intervals

of twenty miles on the main roads be carried into effect, the country will be rendered infinitely more accessible to the automobilist.

TO ENCOURAGE SPEED TRIALS

Since the committee in charge of the Automobile Club of America's challenge for the Bennett international cup proposes to hold the trial races for the third member of the team not yet selected on Berkeley Oval or some other bicycle track, the idea suggests itself to the bicycle race promoters that in addition to motor cycle races at bicycle meets automobile contests as well may be practicable. In fact, with this possibility in view the board of control of the National Cycling association is already at work on rules for motor cycle and automobile track racing.

SMALL BOYS IN MISCHIEF

The ever present, ever meddlesome small boy fooled with the starting machinery of an unguarded automobile in New York the other day. The result was that the pesky auto kicked up its heels, ran away and played "rough house" on the streets of the neighborhood. There would seem to be an opportunity for inventors to contrive a locking device for the benefit of those automobilists who must stop on the corner "to see a man" or have to run in to say how-dy to a girl just for a moment.

COLLECTING A LIBRARY

At the permanent headquarters of the Automobile Club of America is being collected a most valuable library of motor vehicle reference, embracing, in addition to all the foreign and domestic periodicals, books on the new locomotive science as well as allied sciences of steam and electricity. Students of the game from the useful and constructive standpoints already find the library of great value and make extensive and general use of it.

CURRENT BREVITIES

The Seely Mfg. Co. has opened a large repository with 180-foot glass front at the

corner of Baum and Beatty streets, Pittsburg, Pa., where it has Woods motor vehicles for sale. A first class gasoline vehicle will shortly be added to the line of automobiles handled. The company has a power plant on the premises and uses it as a storage station.

The Erie Cycle Co. of Anderson, Ind., has received patterns for its automobile and is having the castings made. It is thought the first one will be ready to be on the streets by April 1. J. B. Lott, president of the company, has about concluded to call it the Herald.

It may be a horseless age, but it is not altogether a friendless one to the horse even among his enemies. The Humane Society of Newark, N. J., is raising a fund to purchase an automobile ambulance for sick and wounded horses.

Peter Forg of Somerville, Mass., the well known sprocket maker, is well advanced toward the turning out of compensating gears. He is also at work on boilers, gasoline burners and other automobile parts.

The Elastic Tip Co. of Boston, Mass., is carrying a full line of motor parts, consisting of lugs, swivels, hubs, steel rims, etc., that enter into the running gear of a motor carriage.

John W. Lovett of Anderson, Ind., is reported to be interested in the formation of a company to operate an automobile stage line in Indianapolis.

Newport, R. I., claims to have established the first automobile livery where vehicles may be stored, rented with or without drivers, and "groomed."

Arthur A. Zimmerman, once the world's greatest cyclist, is the inventor of a motor which he believes will be applicable to motor vehicles.

The Woods Electric Vehicle Co. of Wisconsin has been incorporated and will run automobiles in Milwaukee shortly.

The U. S. Automobile & Transportation Co. has placed an order for 2,000 uniforms with a Baltimore house.

The General Carriage Co. has ordered 100 gasoline vehicles for use in Boston.

Many industries are feeling the beneficial effects of the automobile industry.

Producers of automatic machinery, forgings, materials, varnish, paint, lubricants, lamps, bells, odometers, costumes and various accessories are, of course, great and direct beneficiaries. But prosperity is still further extended. The road houses and country hotels are likely to experience much added trade in coming years from automobile tourists and outing seekers.

E. J. Pennington, of international notoriety in connection with automobile cycles and flying machines, and C. G. Wridgway and C. Jarrot, recently arrived from England to challenge American motocyclists to race, have forwarded to Paris their entries to the Paris-Bordeaux road race, to be started May 23. The machines to be used are of the Pennington racing type, called the "Torpedo."

The Bevin Bros. Mfg. Co., East Hampton, Conn., has brought out a five-inch double chiming automobile bell. The company also manufactures alarms, brakes, lamp brackets and guards.

The Locomobile Company has started work in its new factory at Bridgeport, Conn., which was formerly occupied by the Liberty Cycle Co.

The Liberty Bell Co. of Bristol, Conn., has under way a very attractive automobile bell, which will shortly be put on the market.

An automobile line is to be established between Florence, Tenn., and the works of the Florence Wagon Works.

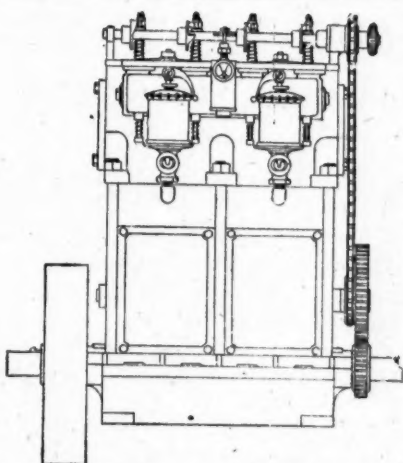
The Sandusky Automobile Mfg. Co. of Sandusky, O., has been incorporated with a capital stock of \$5,000.

Some of the daily papers comment, with evident amazement, on the fact that a

self-propelled hose carriage is used by the fire department of Paris. Distance lends enchantment to the view. If they would look over the field of operation at home they would find that Hartford has been using self-propelled fire engines for the last three years.

The Snow Cycle Chain Co. of Syracuse, N. Y., will probably in the near future have a new automobile chain to offer.

The people of Grand Forks, N. D., are contemplating the establishment of an automobile stage line.



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